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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,902	09/28/2000	Barrie Gilbert	1482-129	8966

7590 11/12/2003

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EXAMINER

NGUYEN, TUNG X

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 11/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/675,902	GILBERT, BARRIE	
	Examiner	Art Unit	
	Tung X Nguyen	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0802</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Applicant's response to amendment after final rejection filed on 9/25/03 has been entered.

Allowable Subject Matter

The indicated allowability of claims 2, 3, 5, 10, 12, 19, 20, 22, 23 are withdrawn in view of the newly or (oldly) discovered reference(s) to Hashimoto et al. (j.p 362179635), Yamashita et al. (u.s.p 4,906,836), Fairley et al. (u.s.p 5,019,786), Barnett et al. (u.s.p 4,261,056), Belcher (u.s.p 5,789,927), . Rejections based on the oldly and/or newly cited reference(s) follow.

Response to Arguments

2. Applicant's arguments with respect to claims 2-29 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 2, 10, 19, 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In the instant application, the claimed **“the first and second log amps are progressive compression log amps”** recited in claims 2, 10, 19, 22, are not clear supported elsewhere in the specification. Correction to the claims is requested.

6. Claims 2, 10, 19, 22, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. See the explanation above.

To apply art, the examiner assumes that the first and second progressive compressive log amps are the same with the first and second log amps.

7. Claims 2, 10, 19, 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term “the first and second log amps are progressive compression log amps” recited in the claims 2, 10, 19, 22 lacks a clear support teaching in the specification.

The dependent claims 3, 5, 12, 20, 23 are rejected base on the rejected independent claims.

To apply art, the examiner assumes that the first and second progressive compressive log amps are the same with the first and second log amps.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 2-5, 22-23, 25-27, 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamashita et al. (u.s.p 4,906,836).

As to claims 2-5, 22-23, 25-27 Yamashita et al. disclose in Fig. 1, a measurement system comprising: a first log amp (LOG1) having a current output (inherent); a second log amp (LOG2) having a current output (inherent); and coupling to a differencing circuit (AMP1), wherein the differencing circuit is arranged to continuously process output from the first (LOG1) and second (LOG2) log amps; and the differencing circuit (AMP1) having a summing node (at the negative node and the positive node of AMP1, for example the feed back loop R2 and R1 meet at the negative node).

As to claim 29, Yamashita et al. disclose in Fig. 1, the adding limitation of the Log Amp have current-mode outputs be considered as the difference voltage signals between the negative node and positive node of the amplifier (AMP1).

10. Claims 14-15, are rejected under 35 U.S.C. 102(b) as being anticipated by Hashimoto et al. (j.p 362179635).

As to claims 14-15, Hashimoto et al. disclose in Fig. 1, the system comprising a first, second and third Log Amps (13) couple to the first and second and third input of the differencing circuit (14)

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 6-9, 16-17, 21, 24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (u.s.p 4,906,836), in view of Fairley et al. (u.s.p 5,019,786).

As to claims 6-8, 16-17, 21, 24 Yamashita et al. disclose in Fig. 1, all of limitations except for a phase detector core coupled to the first and second log amps (LOG 1, 2). However, Fairley et al. discloses in Fig. 2 a phase detector core (30) comprising a multiplier (col. 6, lines 25-29) coupled to the output signals of the divide-by-N counter (38) and the reference input signal for measuring the difference phase between two signals. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system of Yamashita et al., and provide the phase detector core (30) as taught by Fairfey et al. for measuring the difference phase between two signals from Log Amps (1, 2).

As to claim 9, Fairley et al. disclose the measurement system further comprising an output interface circuit (32, 34, 36) coupled to the phase detector core (30).

As to claims 16-17, Yamashita et al., in view of Fairley et al. are silent the limitations of the first and second Log Amps having the first and second limiting output respectively, It would have been obvious to a person having ordinary skill in the art at

the time the invention was made to easily recognize that any amplifier of the Log Amp having the limiting output and it would have been well known in the art that the Log Amp having the limiting output. For example, the gain stages are typically implemented as limiting amplifiers having the limited output in the "Prior Art" of figures 1, 2.

13. Claims 10, 11, 12, 18, 19, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (u.s.p 4,906,836).

As to claims 10, 11, 12, 18, 19, 20, Yamashita et al. disclose in Fig. 1, the system comprising: a first log amp (LOG 1), and the second log amp (LOG 2) arranging symmetrically about a center line (see Examiner's label on Fig. 1); and wherein the first and second log amps are co-integrated on a substrate in a package. For example, (see the abstract) mentions that "An integrated circuit includes an operational amplifier... the output of the second logarithmic amplifier is connected to the inverting input terminal of the operational amplifier", thus obviously suggesting the first and second log amps are co-integrated on the semiconductor. In regard to claimed "co-integrated on the substrate" it is note that the reference is silent such feature; However, It would have been obvious to a person having ordinary skill in the art at the time the invention that any conventional semiconductor structure could have an co-integrated on the substrate implemented as an inherent design variations, as also well-known in the existing semiconductor technology.

14. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (u.s.p 4,906,836), in view of Barnett et al. (u.s.p 4,261,056).

As to claim 13, Yamashita et al. disclose in Fig. 1 all limitations except for the first parasitic network coupled to the first log amp; and a second parasitic network coupled to the second log amp. However, Barnett et al. disclose in Fig. 7, the first parasitic network (40, 42, 44) being considered as the low pass filter, and band pass filter (40, 44); and the second parasitic network (41, 43, 45) being considered as the low pass filter, and band pass filter (41, 45) coupled to the first and second Log Amps (46, 47) for reducing the noise signals before coming to the Log Amps (46, 47). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system of Yamashita et al., and provide the first and second network (40, 44, and 41, 45), as taught by Barnett et al. for reducing the noise signal before coming the Log Amps (46, 47).

15. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (u.s.p 4,906,836), in view of Belcher (u.s.p 5,789,927).

As to claim 28, Yamashita et al. disclose in Fig. 1 all limitations except for the power amplifier having an input coupled to an input of the first log amp and an output coupled to an input of the second log amp. However, Belcher disclose in Fig. 3, the power amplifier (10) having an input coupled to the first hard limiter (21) being considered as the first Log amp, and the output coupled to the second hard limiter (31) being considered as the second Log amp for measuring the error between two signals of the input and output of the power amplifier (10). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the system of Yamashita et al., and provide the power amplifier (10), as taught by Belcher

for measuring the error between two signals of the input and output of the power amplifier (10).

16. The method is considered inherent in the structure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X Nguyen whose telephone number is (703) 305-3337. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (703)-308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

TN
10/27/03

David A. Zandue
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Primary Examiner
AVZ827
10/2/3